

Science Beyond the Self: Remarks on Charles S. Peirce's Social Epistemology*

*Ciência Além do Ego:
Observações sobre a Epistemologia Social de Charles S. Peirce*

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Abstract: For Peirce, science is decidedly a social enterprise. However, since Peirce defined science broadly as “the devoted, well-considered, life pursuit of knowledge,” what he said of science applies by and large to the acquisition and assessment of knowledge in general. In this paper I aim to shed light on Peirce's social epistemology by examining his views on scientific inquiry in the light of his philosophy of mind. I will argue that how Peirce recasts key concepts such as self, mind, thought, and person, has deep repercussions for how to interpret inquiry and assess its end product. The argument I present combines Peirce's notion of the scientific method as the fourth and most stable manner of fixing our beliefs developed in the late 1870s in *Popular Science Monthly*, with his notion of the self as he expressed in the *Journal of Speculative Philosophy* a decade earlier.

Keywords: Descartes. (Social) Epistemology. Mind. Peirce. Person. Self. Science. Thought.

Resumo: *Para Peirce, a ciência é decididamente um empreendimento social. Entretanto, uma vez que Peirce definiu ciência de modo genérico como “a busca permanente, dedicada e ponderada do conhecimento”, o que ele disse da ciência se aplica, grosso modo, à aquisição e avaliação de conhecimento em geral.¹ Neste trabalho, pretendo fazer alguns comentários sobre a epistemologia de Peirce, analisando suas opiniões vis-à-vis a investigação científica à luz da sua filosofia da mente. Argüirei como a forma pela qual Peirce redefine conceitos-chave como ego, mente, pensamento e pessoa têm repercussões profundas na interpretação da investigação e avaliação do seu*

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produto final. O argumento que apresento combina a noção de Peirce sobre o método científico como a quarta e mais estável maneira de fixar nossas crenças, desenvolvida no final da década de 1870 em Popular Science Monthly, com sua noção de ego como expressa no Journal of Speculative Philosophy, uma década antes.

Palavras-chave: *Descartes. Epistemologia (social). Mente. Peirce. Pessoa. Self. Pensamento.*

The classic expression of Peirce's social epistemology appears in his 1868 "Some Consequences of Four Incapacities" where he argues that a statement is true, and hence its object real, when after an indefinitely long examination it is agreed upon by the *community* of inquirers. By taking this course Peirce made the communal aspect of inquiry an intrinsic part of the conceptions of truth and reality. Peirce later referred to this as "the social theory of reality" (R 958:146), and though he does not seem to have used the phrase himself, because of the parity between truth and reality we may also ascribe to him a social theory of truth.

For Peirce, Science is social on at least two levels. Its *method* is social and its *facts* are social. First, the *method* of science is social. Scientific research is an inherently communal affair. It involves multiple individuals in continual interaction. Peirce's focus is not on the solitary genius who, abandoned by all, traverses the path of truth entirely on his own, but his focus is always on the *community* of inquirers. As I will show, the notion of a solitary inquirer is the product of a Cartesian view of what the mind is and how it relates to knowledge and truth. Second, and closely related to the first, the facts of science are social facts. They are public facts that are at least in principle accessible to anybody who takes the trouble to inquire into them.² As Peirce put it, "As long as only one man has been able to see a marking upon the planet Venus, it is not an established fact. Ghost stories and all that cannot become the subject of genuine science until they can in some way be welded to ordinary experience" (CP 7.87). Only when observations enter the public domain do they become facts. To put it in a different way, the mental states of scientists should never be confused with scientific facts, as is often done within the Cartesian tradition, especially within subjectivist and relativist circles.

As the above already suggests, Peirce went much farther than merely advocating that scientists do better when they cooperate. As his comments on truth and reality indicate, Peirce saw social interaction as essential for the attainment of truth, a view that is not merely a product of his philosophy of science, but that is also deeply caught up with his philosophy of mind and his anti-Cartesianism more generally. Peirce developed his anti-Cartesian stance in his *Journal of Speculative Philosophy* series of the late 1860s, developing them further in his *Popular Science Monthly* papers. The argument I am going to present here combines Peirce's notion of the scientific method as the fourth and most stable manner of fixing our beliefs as developed in *Popular Science Monthly*, with his notion of the self as he had first developed in the *Journal of Speculative Philosophy*.

² Peirce is well aware, however, that for many claims made under the guise of science most people are not equipped—in terms of mental acumen, background knowledge, access to resources, etc.—to adequately inquire into them.

One caveat should be made. In what follows I will refrain from utilizing the semiotic paradigm developed by Peirce even though in his *Journal of Speculative Philosophy* series he explicitly defines man in semiotic terms. The reason for doing so is to prevent a premature imposition of a new but already well-developed general framework upon familiar concepts—such as mind, self, person, and consciousness—and the phenomena they are presumed to apply to. With Peirce’s semiotic conception of man we are seeing the emergence of a new paradigm that is radically different from familiar Cartesian and post-Cartesian conceptions of man. In essence, the current paper seeks its way between these two paradigms, trying to survey the battlefield of a scientific revolution that is still in the making, while using—insofar as this is still feasible—familiar categories and distinctions with the aim to draw out continuities. Put differently, I am trying to avoid falling into the mistake that cognitive scientists fell into when they prematurely and rather off-handedly dismissed the old ways of talking about mind, self, person, and consciousness as belonging to a primitive and outdated “folk psychology.” The subsequent pages will reveal, however, that the old conceptions are indeed ill suited to classify and give structure to mental phenomena once the Cartesian paradigm is abandoned. The unclarity of the distinction between self and person, I think, is a good example of this.

Science and the Fixation of Belief

The social element plays a central role in the four ways of fixing belief that Peirce distinguished in “The Fixation of Belief.” On Peirce’s account, the first three are in the end unsuccessful because the social force is against them. The methods of tenacity, authority, and the a priori method, cannot in the long run generate stable belief as sooner or later believers are faced with the undermining effect of dissenting opinions.³ When that happens those who fixed their belief through the first three methods have little other option but to go on the defensive, that is, by respectively strengthening their obstinate willpower, by increasing authoritarian oppression, or by encapsulating dissenting opinions within familiar ways of reasoning. The fourth method, called the scientific method, is not similarly affected. Here the exact opposite is true. Far from the social force being against it, the social force *supports* the scientific method as it is precisely through interaction and the exchange of ideas that different people who study the same issue come to straighten out their idiosyncrasies in perception and understanding. Put briefly, whereas with the first three methods the influence of others has a *diverging* effect, and one that must be actively suppressed to retain the belief, for the scientific method the influence of others has a *converging* effect, at least, Peirce is careful to add, in the indefinite long run. Hence, far from shielding himself from the influence of others, the true scientist deliberately seeks the input of others.

Central to the scientific method is the conviction that there are things that are independent of what you or I or any group in particular thinks them to be, and that these make that prolonged discussion about them has in the end a converging effect.

³ Because they do not in the end generate stable belief it is not appropriate to apply the term “truth” to them.

Interaction with others, Peirce argued, ensures that the idiosyncrasies caused by, as he put it, “limitations in circumstances, power, and bent,” which on his pragmatism are the only possible source of error, are being filtered out. To illustrate his point Peirce gave the example of the blind and the deaf man who both witness a murder. Though both had very different sensations (the sound of a pistol versus the sight of a man falling down), a sufficiently long discussion will cause them to agree that a murder had been committed. In short, the social process of filtering out idiosyncrasies and personal biases guarantees, at least ideally, that in the long run inquirers come to an agreement such that no new evidence can undermine it. For Peirce the pragmatist, this agreement—or ultimate opinion as he called it—is the truth of the matter, and its object is reality.

Hence, for Peirce, scientific inquiry is distinctly a social affair where groups of people seek true answers to the questions they ask without any ulterior motives, so that everyone is receptive to their views being corrected by others. In line with this, Peirce denied that there is a single scientific method, or that truths can be found only when we follow a very specific path of discovery. On the contrary, there are many alternative ways in which truths can be found. For instance, one may derive the rotation of the earth from evidence as varied as the movement of the heavens, the swinging of a pendulum, the aberration of light, and even the draining bathtubs. Dismissing the notion of a privileged scientific method, Peirce emphasized that what characterizes science is that inquiry is engaged in with the right attitude, that is, from a genuine desire to find true answers to the questions one is asking.

It seems that the account of scientific inquiry I just sketched can be wholly interpreted in terms of standard Cartesian style subjects—atomic self-sufficient individuals who are mentally wholly mature before they begin interacting with objects and people around them. Were we to interpret Peirce’s account this way, all it would come down to is the methodological recommendation that cooperation is more efficient than working alone. However, Peirce goes much further than this. He radically rejected the Cartesian notion of mind, and this dramatically changes the picture. In a sense Peirce has no other option but to reject the self-enclosed Cartesian subject *if* he is to take seriously the idea that interaction is crucial to science, because it is *through interaction* that individuals correct one another. By taking this course Peirce rejected one of Descartes’s basic assumptions, namely, that in virtue of being a rational agent an individual left to his own devices will correct all his idiosyncrasies through an internal process of ratiocination. It is to Peirce’s different conception of man, most specifically his alternative conceptions of self, mind, thought, and person that I turn now. In the final section I will draw some implications of this for our understanding of scientific inquiry.

The Self Supposition

According to Peirce, and here he differs decidedly from Descartes, what we refer to when we refer to ourselves – the “I” in the famous “I think, therefore I am” – is not something we intuit directly and infallibly, but something that is acquired through the interaction with others. In “Some Questions Concerning Faculties Claimed for Man,” having first carefully staked out the terrain (including a refutation of innate knowledge and a denial that we have a power of introspection), Peirce gave an account of the

origin of self consciousness that reveals how our inner lives are a function of our interaction with the environment, most significantly with our own body and with other humans. The theory is Darwinian in spirit. Consciousness develops from surface irritations where the latter become significant in a manner that has survival value. What we may loosely call our mind derives its relative unity from the body, as the body is our sole conduit to the world: only what it touches has feeling, only what's on its tongue has taste, etc. Since all interaction with the world is mediated through a single body, and since the mind is both an aspect of that body and a product of that body's interactions with its environment, the body can be seen as steering the mind to unity and singularity, including a unity of consciousness.

Through a prolonged interaction with others, the individual organism develops the ability to communicate through language. This, Peirce observed, introduces testimony by others as a means of discovering how the world is in addition to direct sensory experience. For Peirce, the moment testimony comes into play marks the emergence of the self. Peirce put it most explicitly in a draft of "Some Questions Concerning Faculties Claimed for Man":

The dawning of the conception of testimony is the dawning of self-consciousness. Because testimony relates to a fact which does not appear. Thus, a distinction is established between fact and appearance. For example, suppose a child hears that a stove is hot; it does not seem so to him, but he touches it and finds it so. He, thus, becomes aware of ignorance and it is necessary to suppose an *ego* in whom this ignorance can inhere. (W2: 168f)

Put concisely, the discovery by the individual that he is sometimes mistaken and that there is much he doesn't know, requires the supposition of a self that is fallible.

Moreover, given Peirce's claim that we can have no notion of what is incognizable – a view that segues into his pragmatism – the error and ignorance can be recompensed, at least in principle, through inquiry or testimony by others. Peirce did not put a blanket prohibition on reliance on testimony, as did Descartes. On the contrary, since no individual can inquire into everything that raises his curiosity, and since every individual needs correction by others, testimony plays a crucial role in Peirce's notion of inquiry. How far does this reliance on testimony go? Peirce answered this question rather dramatically: it may even convince a man that he is mad. The great difference with the schoolmen's reliance on testimony, however, and here Peirce sides firmly with Descartes, is the insistence that inquiry is engaged in with a genuine desire to discover the truth.

The upshot of all of this is that the self is introduced as a hypothesis to account for the individual's recognition of error and ignorance. On the whole we attribute what we experience to the outside world: "A man who gets up on the wrong side of the bed, for example, attributes wrongness to almost every object he perceives. That is how he experiences his bad temper" (CP 1.335). Though we may not simply conclude from this that the self is wholly defined in terms of error and ignorance, or that error and ignorance constitute all there is to the self, it does set a tone, and it does intimate that whatever else is attributed to the self needs to be argued for independently.⁴

Throughout his life, Peirce continued to interpret the self in terms of ignorance and error. Admittedly, Peirce's later repositioning of ethics in his division of the sciences,

led to a broadening of his conception of the self. But this broadening did not change the self's nature, but rather reinforced it. In the 1860s, Peirce's conception of the self was confined to the sphere of logic where the issue is what counts as a good or a bad representation. Error and ignorance both have to do with bad representations. In Peirce's revised division of the sciences, logic was identified as a normative science, and one that is not only preceded by the normative sciences of esthetics and ethics, but that is also grounded in them. Realizing that limiting the self to the sphere of logic would be arbitrary, Peirce broadened his conception of the self to include not only what is bad in logic, but also what is bad in esthetics and what is bad in ethics. Peirce described this new self poignantly on the dust cover of his personal copy of William James's 1909 *The Meaning of Truth*, where he wrote:

A man's Self, Ego, or Mind, is that element of him the supposition of which as an element of him explains his admiring despicable things, his striving to effect what he cannot accomplish or what he would regret, if he did, together with all the phenomena of ignorance and error. For if it had none of these imperfections there would be no reason to suppose there was distinction between what is within us and what belongs to the outer world. (R 1108:04)

In brief, we are wholly defined in terms of our imperfections.⁵

It is clear that the self that Peirce arrived at is quite different from that of Descartes, and that its role within inquiry is different as well. Whereas within the Cartesian view, inquiry has to be arranged so that its results can be perceived clearly and distinctly by a single mind, this makes little sense when the self is understood in the Peircean sense. Since the self is defined in terms of error and ignorance, inquiry is not a process of self-fulfillment, as with Descartes, but a process of self-abnegation.⁶ This self-abnegation is driven by a desire to remove error and ignorance the moment it is spotted. Hence, in Peirce's view, the self is only a vehicle of thought and its process, and science is possible where the self itself seeks to obliterate itself. That is to say, the ultimate opinion does not come with the individual human mind as its ultimate container.

⁴ To define a man in terms of his ignorance is like defining the coastline of an island in terms of the sea that surrounds it.

⁵ Defining the term "evil" for the *Century Dictionary* supplement as "That which men in general ought to resist," Peirce gave the following illustration quoted from his own work: "The well-being of mankind demands that there should be pain and evil; and we ought to thank God for permitting them to exist. For so man is permitted to have a part in the creation" (R 1177:10).

⁶ The idea of self-abnegation lies at the root of Peirce's fourth method of fixing belief because scientific inquiry, rather than making man the guardian of truth (as with the first three methods), requires a total surrender to the *force majeure* of experience (CP 8, p. 283). The idea of self-abnegation is also closely related to the idea of personal freedom. It belongs to the very logic of freedom, Peirce observed, that it annuls itself, a view he supports with the following *reductio*: "if it does not annul itself, it remains a completely idle and do-nothing potentiality; and a completely idle potentiality is annulled by its complete idleness" (CP 6.219).

Thought, Mind, and Persons

So far, the story is mostly a negative one, and one that is hardly representative of how we see ourselves. Most of us possess rich inner lives, and we generally identify ourselves not with our *false* beliefs, but with *all* our beliefs. True beliefs are considered as much a part of ourselves as false ones, if not more so. Hence, on the face of it we seem to be defined by much more than our errors and our ignorance.

Before addressing this issue, I will first consider Peirce's views on mind, thought, and person to get a fuller idea of how he sees the inquirer. In the traditional view, thought, mind, self, individual, and person were often equivocated with consciousness, so that all can be conveniently cooped up in an inner realm that is connected to the "external" world through something like a pineal gland (Descartes), or that runs parallel to this world (as with Leibniz's pre-established harmony). Peirce ventures in a different direction, thoroughly rewriting not only our notion of self, but also our notions of mind, thought, individual, and person. The result is a much more open conception of what we are. Without denying the unifying power of the organism, mentioned above, what we end up with is not a plurality of preformed isolated minds that are both external and independent of one another, but a multitude of dynamic minds overlapping at countless places and deriving much of their identity thereof. Having discussed Peirce's notion of the self, it is to his views on thought, mind, and persons that I'll now turn.

With respect to mind, Peirce rejected the psychologists' view that identifies mind with consciousness, or feeling. Peirce rejected this view in part because of his focus on habit and disposition in "The Fixation of Belief" and afterwards. Restricting mind to what we are conscious of is problematic because we are unaware of many of our habits and dispositions. Nonetheless, since many of our habits and dispositions are as much expressions of error and ignorance as the opinions we consciously entertain, habits and dispositions form an intrinsic part of our selves. Hence, there is more to our mind than what we are conscious of. We may have a privileged access to our mind, but it is a limited access nonetheless. Robert Meyers refers to this as an enthemematic conception of mind, meaning that most of the connections between our beliefs are implicit and not accessible through introspection.⁷ The identification of mind with consciousness Peirce considered a consequence of the mistaken belief that knowledge is a state of feeling instead of a readiness to act. As he put it in *How to Reason*, "intelligence does not consist in feeling intelligently but in acting so that one's deeds are concentrated upon result" (R 406.02). Peirce moreover denied that mind is something specifically human. In his evolutionary cosmology he carved out a central role for mind, arguing that matter itself is effete mind, or mind hidebound with habit. This means not only that, for Peirce, there is no mind-body dualism, but also that mind is not necessarily the sort of thing that is connected to a single organism. Peirce is advocating a panpsychism of sorts: mountains, trees, fish, buffalo, and humans, are all instantiations of mind that is bound in a certain way; and there is no need to limit ourselves to individual things: groups of men, herds of buffalo, schools of fish, forests, and mountain ranges are also instantiations of mind bound in a certain way.

⁷ MEYERS, Robert G. "Peirce's Extension of Empiricism." *Transactions of the Charles S. Peirce Society* 38 (2002): 137–54, p. 143.

Like Frege, Peirce advocated an unpsychologistic view of thought, understanding by thought not the subjective act of thinking but its objective content. As with mind, Peirce denied that *thought*, to be thought, must always be present to a consciousness. Just as there can be obligations when nobody observes them, there can be thoughts when no one entertains them. A computer generated proof of a mathematical conjecture that is printed, bound, and stored, only to get lost in an unfortunate library fire before anyone ever looked at it, contains countless thoughts that were never “thought” in a psychological sense.

Peirce also objected to an overly nominalistic view of thought on which thoughts are treated as ethereal entities with matter-like qualities, thus implicitly imposing upon them what is taken for granted for material objects, such as the principle of monolocation – which states that no thing can be in more than one place at the time. Thoughts, Peirce argued, are not bound by this constraint. One and the same thought can be in countless places at once, and it often is. For instance, Peirce observed, “it is much more true that the thoughts of a living writer are in any printed copy of his book than that they are in his brain” (CP 7.364).

Peirce further denied that thought is inherently private. Recall that what matters for science must be *public*. Private thoughts, if not a straightforward *contradictio in adjecto*, are at best fringe phenomena. Generally, when we call our thoughts private we do so for one of two reasons:⁸ First, we call our thoughts private when we consider them very deliberately a product of our own making, like an opinion that is expressed not in virtue of some office held, but that is expressed on personal title. Second, we call our thoughts private when others have no access to them. The two are combined when someone originates a thought and then keeps it to himself, as in daydreams or in the mental scheming of a disgruntled employee. With regard to the first – that thought is private when it originates with the thinker – this is put in different light when we recall Peirce’s conception of the self. The privacy of the thought – that which gives it its uniqueness – is here due to idiosyncrasies of the thinker, meaning his particular blend of error and ignorance. The second – that thought is private because in an essential way inaccessible to others – has a prominent place in the paradigm Peirce rejected, namely the view that thought is a form of feeling and that since I can never feel exactly what you feel I can never think exactly what you think. Peirce’s recasting of what thought is makes this no longer an issue, especially since Peirce maintains that one and the same thought can be in multiple places – and hence in multiple minds – at once.

Committing himself to the public or social nature of thought, Peirce denied that our thoughts *belong* to us in the sense in which we say that our hands or our teeth belong to us. Peirce repeatedly observed that it is wrong to say that thought is in us – as if thinking were something like eating soup – and that we should say instead that we are in thought. In fact, in Peirce’s view, “thought it is *more* without us than within” (CP 8.256, emphasis added). Not only is thought more without us than within, it is also not something particularly human: “It appears in the work of bees, of crystals, and throughout the purely physical world; and one can no more deny that it is really there, than that the

⁸ There is at least a third reason. I can call my thoughts private when I believe they are nobody’s business, or for other reasons I don’t want anyone to know.

colors, the shapes, etc., of objects are really there” (CP 4.551). Hence in a move that seems to dwarf the displacement caused by the Copernican revolution, Peirce noted that what we call *our* thoughts – because they enter *our* consciousness or because *we* feel entitled to claim their authorship – far from being center stage, are merely a relatively insignificant fringe of thought. They are steps on a shaky ladder we no longer need once we reach our goal. (What counts is how our conclusions can be supported, not how we reached them.)⁹

Next we come to the notion of a person, which Peirce loosely defined as “mind whose parts are coordinated in a particular way” (R 954). Several of the observations Peirce made with respect to mind and thought carry over into his conception of a person. Personhood is not restricted to what the individual in question is conscious of. I may even be a quite different sort of person than I conceive myself to be, just as others may discover that I am angry or irritated well before I do, or may recognize in me the racist I vehemently deny I am. Personhood, moreover, is to an important degree virtual as it includes besides all I think and do also what I would think or would do when a certain occasion arises. Hence, no matter how my life evolves, given that I will encounter only a fraction of the occasions I am prepared for, I will never manifest all that’s in me (cf. R 449:16). In this respect personhood is very much like a promissory note, both to our current self and to others. At the same time, being a person is to be understood as a having a certain unity and identity.

In line with his comments on mind and thought, Peirce denied that consciousness is a prerequisite for personhood, and he denied that only individuals can be persons. A group of people can be a person too. As Peirce put it: “That the *esprit de corps* of a military company, a club, a university, a nation, is essentially of the same nature as the consciousness of a person, I have long been persuaded” (R 961a:87). Two spouses that can finish each other’s sentences, begin to dress alike, develop the same taste in food and music, etc. are becoming a single person. And as Peirce put it elsewhere, “[a] man’s circle of society (however widely or narrowly this phrase may be understood), is a sort of loosely compacted person, in some respects of higher rank than the person of an individual organism” (CP 5. 421).

Attributing personhood to groups, social trends, and even general ideas, may appear an ill-conceived attempt to stretch the meaning of the word “person” to things it applies to at best metaphorically, as personhood is traditionally attributed only to individuals. However, when considered from a Peircean stance, the situation is exactly the reverse: attributing personhood to *individuals* is an ill-conceived attempt to apply the concept of personhood to something it strictly doesn’t apply to.¹⁰ What personhood applies to is the individual interacting with his future self. Hence, it’s a *social* concept. Peirce rejected the preconceived idea that the human person is strictly an individual on the ground that “his thoughts are what he is ‘saying to himself,’ that is, is saying to that

⁹ Something like Goldbach’s conjecture – that every even integer greater than 2 can be represented as the sum of two primes – is a good case in point. This is not to say that how someone reached a conclusion is never useful. However, when it is, it is to retrieve or discover how the conclusion can be supported.

¹⁰ This is true especially when we conceive individuals in the traditional sense as individuals, i.e., units that cannot be divided.

other self that is just coming into life in the flow of time. When one reasons, it is that critical self that one is trying to persuade” (CP 5.421; emphasis added). Moreover, given the arguments Peirce presented much earlier in “Some Faculties Claimed for Man,” the interaction the individual has with himself is not different in kind from his interaction with others. Hence, the notion of personhood is in its very essence a social notion that applies only to us humans because strictly we are not individuals. Because of the dialogic nature of thought we are social even when we are alone. Mapping personhood to self-enclosed atomic individuals, as the Cartesian tradition tried to do, is misconceived.

The social nature of the individual inquirer is also the source of self-control. For Peirce, “a person cannot perform the least reasoning without some general ideal of good reasoning; for reasoning involves deliberate approval of one’s reasoning; and approval cannot be deliberate unless it is based upon the comparison of the thing approved with some idea of how such a thing ought to appear” (CP 2.186). Moreover, Peirce observed, “a person who draws a rational conclusion, not only thinks it to be true, but thinks that similar reasoning would be just in every analogous case” (CP 1.606). The latter includes, no doubt, the recognition that the same reasoning done by others would lead to the same conclusion, suggesting that what gives substance to one’s conclusions is not something that comes from the privacy of the individual mind, but from the individual insofar as he partakes within the community and is interchangeable with all reasonable persons.

To further complicate the picture, Peirce maintained that thinking is not something that takes place wholly within the individual organism.¹¹ In a famous passage Peirce observed that just as removing parts of the brain prevents us from having the thoughts that depend on that part, removing one’s inkstand stops the flow of thoughts that require the pen (CP 7.366). Writing not only allows us to develop thoughts we otherwise would not be able to form, but also provides us with an exosomatic extension of our memory. I can recall the thoughts I trusted to paper by consulting my notebook with far greater precision and much less distortion than memory allows. Writing also provides us with a means to communicate our thoughts in a way that differs from normal conversation, whether it is an interior dialogue or a conversation with others. By publishing the notebook, the thoughts contained in it can be shared by many people that are otherwise unconnected. In the process, my thoughts come to lead their own independent life, and after many years they may have become as foreign to me as the writings of others.

The presence of such exosomatic extensions radically changes our notion of knowing something. For instance, I can safely say that we all know what “funambulism” means. Some may know it from memory, but that’s not the only way of knowing it. The crucial thing is that we all know how to consult a dictionary, and though consulting our memory may generally be faster it is not intrinsically different than consulting a dictionary. What counts is that you can bring it to bear when it matters.

¹¹ It may not even primarily take place within the organism. We can think of a student who is handling a calculator and has only fragmentary knowledge of the arithmetical operations involved, or of a supermarket clerk who is wholly dependent on his cash register to determine how much money to return. In such instances a crucial part, perhaps even the bulk of the thinking process, occurs exosomatically, the role of the organism and the individual self being greatly reduced.

The Physical Efficacy of Mind

The social notion of personhood may present us with an alternative to Cartesian individualism. According to Peirce, the individual self is ill equipped to be the ultimate seat of knowledge because it is wholly defined in terms of error and ignorance. But what about persons? Not only individual selves are persons, groups of selves can be persons too. This introduces the communal aspect that Peirce was looking for. A soccer team where its members play seamlessly together even acts as a single unit, and one that has its own personality that shapes its actions. Companies have personalities that are formed by their mission, their marketing, their history, their employees, etc.¹² I will call such supra-individual persons “institutions.” Such institutions can be deliberately organized and closely managed, as with a symphony orchestra, or they can be relatively loose aggregates, like the inhabitants of São Paulo.

Building upon the previous analysis of self, mind, and person, I want to argue that some such institutions constitute supra-individual epistemic agents, by which I mean, first, that they possess knowledge that eludes their members, and, second, that they have physical efficacy. I further would like to argue that as a consequence of this some of these institutions may be held morally accountable for what they do in addition to the moral accountability of their members. This moral accountability is a manifestation of the normativity that is embedded within such institutions. This is an important aspect, since science is a normative enterprise.

First, I would like to argue that institutions have physical efficacy through the collective actions of its members. That is to say, institutions shape their members by exposing them to shared habits and ideas, which generates a communal mindset. Solidarity emerges in how their members see the world, what is important, and what needs to be done. Insofar as being member of an institution informs the actions of an individual, the institution is physically efficacious through that individual. This is true for a church where its members develop an active stance against abortion, for a corporation where its employees are transformed into advocates for its products, and for a university where faculty success is measured in terms of faculty publications. Moreover, having removed the requirement that knowledge must reside within a consciousness, and having acknowledged that thought and thought processes can be exosomatic, institutions should not be identified with mere groups of people. The behavior of many businesses is defined not so much by the efficacy of the people that work there, but by the computer systems that define what those people can and cannot do. Similarly, the principal efficacy that guides the acts of a church is not the personal beliefs and opinions of its members, but the thought extracted from the Bible. Since the principle of monolocation does not apply to thought, many different people can entertain exactly the same thought.¹³

¹² That companies (and organizations more generally) have different cultures is a not infrequent reason why mergers between them fail.

¹³ In fact, Peirce argued that “two minds in communication are, in so far, ‘at one,’ that is, are properly one mind in that part of them” (R 283:110). That is to say, when you and I understand one another – entertain the same idea – we are as one mind.

Interpreted in this way, institutions, like individuals, are organized responses to select stimuli. Being a Christian rather than a Buddhist, a subscriber to the *Daily Mirror* rather than the *Financial Times*, affects, to a large extent unconsciously, how we see the world, what we see, and what we think needs to be done about it. In this manner, Christianity and Buddhism, the *Daily Mirror* and the *Financial Times*, have physical efficacy. In science too, inquiry is shaped by the institutions in the context of which individual inquirers conduct their research, whether these are journals, federal regulations, conferences, the fee structure of lab use, or the strictures that come with grant opportunities. What one is conscious of is only part of what steers one's actions, and it may not even be the most important or the most interesting part. Similarly, the outcomes may largely elude the participants or be without their control.¹⁴ For Peirce, an institution may possess knowledge that none of its members possesses, for instance, when each member acts from a limited perspective and all combined form a unity by means of a vaguely defined and informal "division of labor" through which these limited perspectives supplement and reinforce one another. The physical efficacy of a large and loosely organized institution like a city can be a gentle force on its inhabitants and its (potential) visitors that reveals itself as a statistical phenomenon, as the people of São Paulo differ from those of Rio.

Taking this course shifts the focus from individuals to institutions and from individual knowledge to collective knowledge. Most opponents of the idea of collective knowledge maintain that what it comes down to is merely shared knowledge (different people knowing the same thing). However, this conclusion is generally based on the belief that one can only know what one is conscious of and that individual consciousness is the ultimate seat and arbiter of truth. As we have seen, however, Peirce rejected both. Institutions can be the proper seat of knowledge and often they are. Because of the enormous complexity of science today, and the multifariousness of the phenomena it studies, we have reached the point that for many issues no single individual can fully come to know what we as the scientific community know about it, knowledge that might be dispersed in countless journals, books, conference proceedings, lab reports, government studies, databases, etc. Though this may suggest that all knowledge is known at least once by someone, this is not a conclusion we can draw. Our knowledge base may include a never consulted image database that traces a chemical reaction through thousands of photographs fed into a database by an unmanned camera, computers that are continuously filled with data on seismic behavior near Banda Ateh, etc. What counts is not that we were once conscious of it, or that we will be one day, but that it can be retrieved or that it can motivate us to act.

¹⁴ An interesting case in point is the failure of the 1951 Scribner's edition of Scott F. Fitzgerald's 1934 novel *Tender is the Night* to gain acceptance. The new edition, which removed a major stumbling block in the chronological sequence of the novel by rearrangements drawn from an annotated copy of the book that was found among the papers of the deceased author, was quickly marginalized. By then the fictional tale had long escaped its creator's control. WEST, James. "Twentieth-Century American and British Literature." In: GREETHAM, D.C. (ed.). *Scholarly Editing: A Guide to Research* (New York: MLA, 1995).

For Peirce, man is a community of cells that is itself a cell in a social organism.¹⁵ Since Peirce considered consciousness as “a sort of public spirit among the nerve cells” (CP 1.354), it could even be argued that some institutions are conscious, because they too can possess “a sort of public spirit” among their members. That such a “public spirit” might only partly be accessible to the individual members (for instance, as a faint awareness of a group feeling), or might even escape them altogether, does not count against this. Our conscious too is inaccessible to the individual nerve cells that constitute it.¹⁶

Institutions are self-like entities. As with human persons, they are defined in terms of error and ignorance conceived broadly, including bias, moral deprivation, and even poor taste. In line with Peirce’s terminology we could call them “quasi-selves.”¹⁷ Such self-like institutions exert self-control where their actions are guided by some ideal, no matter whether this ideal is finding the truth, making a profit, or having people obey the law. Consequently, the normativity that Peirce saw as a defining characteristic of science applies not only to individuals but also to institutions. The capacity for self-control lies at the root of moral responsibility. Given what was said about the communal aspects of institutions, this moral responsibility cannot be reduced to the moral responsibilities of their members. By judging institutions within the context of other institutions, or by holding them to their own ideals, they can be held morally accountable.¹⁸

Conclusion

Even though I have touched only very briefly upon Peirce’s criticisms of the traditional notions of self, mind, thought, and person, it is clear that they are not without repercussions for how to understand the role of the individual thinker in the process of knowledge acquisition and assessment. The old model where the individual mind is considered the arbiter of truth, so that nothing could be considered knowledge unless it is clearly and distinctly perceived by a capable rational individual, is no longer tenable. It overstates the role of the individual, mistakenly assumes that the individual is always in the best position to judge its own mental states, and restricts itself too much to what enters consciousness. The self, if considered as the seat of the individual mind, should not be considered as the seat of knowledge, but rather as a vehicle through which thought evolves. That the self is defined entirely in terms of error and ignorance, makes it unfit to be the seat of knowledge and the final arbiter of truth, but does not make it unfit as a means for scientific progress. All it says is that science progresses through a process of trial and error and one that can only be social.

¹⁵ W6:167 and CP 1.547.

¹⁶ Reversely, just as the conscious of our nerve cells is inaccessible to us, the consciousness of the members of the institution is in an important way inaccessible to the institution.

¹⁷ Peirce distinguished “quasi-minds,” by which he meant “things capable of varied determination as to forms of the kind communicated” (EP2:544n22). Though quasi minds function mind-like, they do not need to have a psychological aspect.

¹⁸ Institutions can also be punished. They can be fined, forced to change their ways, put on probation ... they can even be “killed.”

A closer look at Peirce's notion of a person further revealed that the notion of selves must not be restricted to individuals. Groups of individuals too may have selves; selves that go beyond a mere aggregate of the selves of the members of that group. I have referred to such groups as institutions, and as quasi selves, and argued that some such institutions have a physical efficacy all of their own and hence might be classified as epistemic agents. Consequently scientific inquiry and scientific progress involves a development of selves that is external and social rather than internal and solipsistic, resulting in a conception of knowledge that is external and social as well.

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